AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1 to 5. (Canceled).

6. (Currently Amended) A tunable interferometer for measuring an optical surface, comprising:

at least one light source;

a reference surface, light from the at least one light source impinging the reference surface, the reference surface reflecting a first interference beam, wherein the reference surface is stationary when at least one light source impinges the reference surface;

a test object, light from the at least one light source impinging the test object, the test object reflecting a second interference beam;

at least one beam splitter, the first interference beam and the second interference beam striking the at least one beam splitter; and

a polarizer polarizing the first interference beam and the second interference beam so that the first interference beam and the second interference beam each have a different polarization state relative to one another, the polarizer being disposed after the light source and before the beam splitter; and

an analyzer positioned at an output of the interferometer, the analyzer having a variable polarization state, the analyzer tuning the interferometer as a function of the polarized first interference beam and the second interference beam, wherein depending on the polarization state of the analyzer, an additional phase is introduced into ~~at least one of~~ the first and second interference beams of different polarizations so that an interference fringe pattern, imaging the test object, is displaced by a distance,

wherein the reference surface and test object are not displaced in order to effect the tuning of the interferometer.

7. (Previously Presented) The interferometer according to claim 6, wherein the interferometer is a two-beam interferometer, wherein the light is a linearly polarized light, and wherein the polarizer includes a first $\lambda/4$ retardation plate allocated to one of the reference surface and the test object, and a second $\lambda/4$ retardation plate positioned before the analyzer and after the beam splitter to form a circular polarized light of the first and second interference beams.

8. (Previously Presented) The interferometer according to claim 6, wherein the analyzer includes a rotatable linear analyzer.

9. (Previously Presented) The interferometer according to claim 6, wherein the analyzer includes an electrically tunable liquid-crystal element with a linear polarizer.

10. (Previously Presented) The interferometer according to claim 6, wherein the analyzer is arranged physically separate from the interferometer.

11. (Previously Presented) The interferometer of claim 6, wherein the test object is stationary when the at least one light source impinges the test object.

12. (Currently Amended) A tunable interferometer for measuring an optical surface, comprising:

at least one light source;

a reference surface, light from the at least one light source impinging the reference surface, the reference surface reflecting a first interference beam;

a test object, light from the at least one light source impinging the test object, the test object reflecting a second interference beam; at least one beam splitter, the first interference beam and the second interference beam striking the at least one beam splitter; and

a polarizer polarizing the first interference beam and the second interference beam so that the first interference beam and the second interference beam each have a different polarization state relative to one another, the polarizer being situated between the light source and the beam splitter to form the polarized first and second interference beams; and

an analyzer positioned at an output of the interferometer, the analyzer having a variable polarization state, the analyzer tuning the interferometer as a function of the polarized first interference beam and the second interference beam, wherein depending on the polarization state of the analyzer, an additional phase is introduced into ~~at least one of~~ the first and second interference beams of different polarizations so that an interference fringe pattern, imaging the test object, is displaced by a distance,

wherein the reference surface and test object are not displaced in order to effect the tuning of the interferometer.

13. (Previously Presented) The interferometer according to claim 12, wherein the interferometer is a two-beam interferometer, wherein the light is a linearly polarized light, and wherein the polarizer includes a first $\lambda/4$ retardation plate allocated to one of the reference surface and the test object, and a second $\lambda/4$ retardation plate positioned before the analyzer.

14. (Previously Presented) The interferometer according to claim 12, wherein the analyzer includes a rotatable linear analyzer.

15. (Previously Presented) The interferometer according to claim 12, wherein the analyzer includes an electrically tunable liquid-crystal element with a linear polarizer.

16. (Previously Presented) The interferometer according to claim 12, wherein the analyzer is arranged physically separate from the interferometer.

17. (Currently Amended) A tunable interferometer for measuring an optical surface, comprising:

at least one light source;

a reference surface, light from the at least one light source impinging the reference surface, the reference surface reflecting a first interference beam, wherein the reference surface is stationary when at least one light source impinges the reference surface;

a test object, light from the at least one light source impinging the test object, the test object reflecting a second interference beam;

at least one beam splitter, the first interference beam and the second interference beam striking the at least one beam splitter; and

a polarizer polarizing the first interference beam and the second interference beam so that the first interference beam and the second interference beam each have a different polarization state relative to one another, the polarizer being disposed between the light source and the beam splitter;

an analyzer positioned at an output of the interferometer, the analyzer having a variable polarization state, the analyzer tuning the interferometer as a function of the polarized first interference beam and the second interference beam, wherein depending on the polarization state of the analyzer, an additional phase is introduced into ~~at least one of~~ the first and second interference beams of different polarizations so that an interference fringe pattern, imaging the test object, is displaced by a distance; and

a first $\lambda/4$ retardation plate disposed between the reference surface and the test object,

wherein the reference surface and test object are not displaced in order to effect the tuning of the interferometer..

18. (Previously Presented) The interferometer according to claim 17, wherein the interferometer is a two-beam interferometer, wherein the light is a linearly polarized light, and wherein the polarizer includes the first $\lambda/4$ retardation plate allocated to one of the reference surface and the test object, and a second $\lambda/4$ retardation plate positioned before the analyzer and after the beam splitter.

19. (Previously Presented) The interferometer according to claim 17, wherein the analyzer includes a rotatable linear analyzer.

20. (Previously Presented) The interferometer according to claim 17, wherein the analyzer includes an electrically tunable liquid-crystal element with a linear polarizer.

21. (Previously Presented) The interferometer according to claim 17, wherein the analyzer is arranged physically separate from the interferometer.

22. (Previously Presented) The interferometer of claim 17, wherein the test object is stationary when the at least one light source impinges the test object.

23. (Previously Presented) A tunable interferometer for measuring an optical surface, comprising:

at least one light source;

a reference surface, light from the at least one light source impinging the reference surface, the reference surface reflecting a first interference beam;

a test object, light from the at least one light source impinging the test object, the test object reflecting a second interference beam; at least one beam splitter, the first interference beam and the second interference beam striking the at least one beam splitter; and

a polarizer polarizing the first interference beam and the second interference beam so that the first interference beam and the second interference beam each have a different polarization state relative to one another;

an analyzer positioned at an output of the interferometer, the analyzer having a variable polarization state, the analyzer tuning the interferometer as a function of the polarized first interference beam and the second interference beam, wherein depending on the polarization state of the analyzer, an additional phase is introduced into ~~at least one of~~ the first and second interference beams of different polarizations so that an interference fringe pattern, imaging the test object, is displaced by a predetermined distance; and

a first $\lambda/4$ retardation plate disposed between the reference surface and the test object, wherein the retardation between the beam splitter and the analyzer forms a circular polarized light.

24. (Previously Presented) The interferometer according to claim 23, wherein the interferometer is a two-beam interferometer, wherein the light is a linearly polarized light, and wherein the polarizer includes the first $\lambda/4$ retardation plate, and a second $\lambda/4$ retardation plate positioned before the analyzer and after the beam splitter.

25. (Previously Presented) The interferometer according to claim 23, wherein the analyzer includes a rotatable linear analyzer.

26. (Previously Presented) The interferometer according to claim 23, wherein the analyzer includes an electrically tunable liquid-crystal element with a linear polarizer.

27. (Previously Presented) The interferometer according to claim 23, wherein the analyzer is arranged physically separate from the interferometer.